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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,490	05/15/2006	Darras Gilles	AP093-06	1417
29689	7590	10/18/2011	EXAMINER	
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Suite 700			ART UNIT	
1816 Crowchild Trail N.W.			2821	
CALGARY, AB T2M 3Y7			PAPER NUMBER	
CANADA				
			NOTIFICATION DATE	
			10/18/2011	
			DELIVERY MODE	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/595,490	Applicant(s) GILLES ET AL.	
	Examiner ANTHONY ARPIN	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,3-9,11-17 and 20 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,3-9,11-17 and 20 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☒ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 15 July 2011 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

In the last Office Action Examiner objected to the specification over several minor grammatical errors that appeared to have arisen from the translation of the application and provided a few examples of errors in the specification. Examiner points out that although the few examples Examiner pointed out have been corrected, there are still numerous minor grammatical errors that appear in the specification. *For example*, page 2 (the first full paragraph) recites "...the starter is no more activated...." Page 7 (the third full paragraph) recites "At the opposite, the bottom of figure 2 represents the action of the new ballast...." Accordingly, the disclosure is objected to.

Claim Objections

In the last Office Action, Examiner rejected the claims pointing out that the numerous errors appeared to have arisen from a direct translation of the application. However, even after the amendments, the claims are still replete with grammatical and idiomatic errors. Examiner points out some of the errors below.

Claim 3 recites "...comprising the step of monitoring the voltage signals as well as dead times by the ballast using means of...." It appears that "as well as dead times" should be offset by commas.

Claim 9 recites "the ballast is configured to generate...." It appears that "is" should be amended to "being."

Claim 11 recites “dead time.” It is unclear if “dead time” should be plural.

Claim 20 recites “igniting conduction *though* the fluorescent gas” and “ignition of conduction *of* the fluorescent gas.” Furthermore, **claim 20** recites “at least one programmed function that supervise....” It appears that supervise should be supervises.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

In the last Office Action, Examiner rejected the claims pointing out that the numerous errors appeared to have arisen from a direct translation of the application. However, even after the amendments, the claims are still replete with grammatical and idiomatic errors. Examiner points out some of the errors below.

Claims 1 and 9 recite “and at least one electrode including heating filament cathodes at ends....” It is not clear what “at ends” refers to.

Claim 3 appears to have been rewritten in ‘passive voice’ and it is unclear if the ballast is doing the monitoring or if the dead times are simply by the ballast.

Claims 5 and 7 have been rewritten in ‘passive voice’ and it is unclear if the ballast is doing the “activating” or “modifying.”

Claim 14 recites “the special couplings. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites “so that the current in the capacitor is reduced at its lower level....” First, it is unclear if the current is in the capacitor or if it is the current across the capacitor as current is a rate of flow of charge. Second, it is unclear if the current is reduced at its lower level or reduced to its lowest level.

Claim 20 recites “fluorescent gas.” It is unclear what a “fluorescent gas” is. It appears that Applicant may have meant “a mercury vapor gas in a fluorescent tube.” Furthermore, **claim 20** recites “until a phenomenon of resonance is stable.” It is not clear what the phenomenon of resonance refers to. Finally, it is unclear what “controlling a pre-heating...indifferent to temperature of the fluorescent tube.” Examiner interprets this to mean “controlling a pre-heating...indifferent to the starting temperature of the fluorescent tube.”

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Lesea (US Patent 4,415,839).

Examiner's Note: In light of the rejections above, the following claims are rejected as best understood by Examiner.

Regarding **claim 1**, AAPA discloses a method of operating luminaries, said method comprising the steps of:

providing one or more fluorescent tubes that contain mercury vapor gas and at least one electrode including heating filament cathodes at ends, a fixture that comprises holding and connection devices for the fluorescent tubes and a ballast for driving the fluorescent tubes (See Application, Background of the Invention, and Fig. 1. *Examiner notes that in the first claim was written in Jepson form and this was admitted prior art*).

AAPA does not disclose applying non periodic voltage pulses to the lamp.

Lesea discloses applying voltage pulses to the electrodes for exciting the mercury vapor gas (See Fig. 1, 56 and 68 and Col. 5, ll. 31-37), the pulses consisting of non periodic voltage levels separated by variable duration dead times being of alternative form including amplitudes of equal values but of positive and negative polarity (See Fig. 2, LINE 56 and Col. 6, ll. 43-47 and Col. 4, ll. 56-61 and Abstract); and

producing alternative voltage pulses from the ballast (Col. 5, ll. 31-37. *Examiner notes that the ballast generates the voltage pulses on LINE 56*).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine AAPA with the Ballast of Lesea in order to drive the fluorescent lights of AAPA relatively simply and inexpensively and in a highly efficient and regulated manner (See Lesea Col. 4, ll. 6-9).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA and Lesea to obtain the invention as specified in **claim 1**.

Regarding **claim 4**, AAPA does not disclose monitoring dead times.

Lesea further discloses that the ballast monitors each dead times duration according to real time samplings of the current crossing gas in the fluorescent tubes (Summary; Col. 3, l. 65 - Col. 4, l. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to teachings of AAPA and Lesea for at least all the same reasons as given above in the rejection of **claim 1**.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA and Lesea to obtain the invention as specified in **claim 4**.

Regarding **claim 17**, Lesea further discloses characterized in that the ballast includes two parts; a first part being a standard ballast functioning with a main sector and a second part being a specifically assembled part to work with the non periodic pulses of the ballast. (*The ballast 10 includes multiple parts including a pulse generator 30 which is directed or assembled to work with the non-periodic pulses.* Fig. 1 and Col. 4, l. 43 – 47).

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Lesea (US Patent 4,415,839) as applied to **claim 1** above, and further in view of Ribarich et al. (US Patent 6,617,805).

Regarding **claim 3**, Lesea further discloses further comprising the step of monitoring the voltage signals as well as dead times by the ballast (See e.g. Summary,

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Col. 3, l. 65 - Col. 4, l. 3; Col. 5, l. 38 – 41; Fig. 1 and Fig. 2 (*to illustrate dead times 244 in the signal*)).

Lesea does not disclose monitoring the voltage signals as well as dead times by means of a programmed algorithm per se (*Using a programmed algorithm (e.g. on a programmable integrated circuit) in an electronic ballast, is well known in the art (See e.g. Ribarich, Summary)*)).

Ribarich discloses using a programmed integrated circuit (i.e. a programmed algorithm) to monitor operating conditions (Ribarich Col. 3, l. 8 – 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Lesea by implementing a programmed algorithm that a ballast uses to monitor the voltage signals as well as dead times.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Ribarich and Lesea because by implementing a programmed algorithm (*e.g. on a programmed integrated circuit*) the number of external components in an electronic ballast are reduced (See e.g. Ribarich Summary, Col. 3, l. 66 – Col. 4, l. 1). (*Examiner notes that the rejection of claim 1 was a 103 rejection citing AAPA consistent with the first office action. For simplicity, AAPA is left out of the 103 rational as Ribarich as well as any other fluorescent system would include fluorescent tubes or lights*)

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Ribarich, and Lesea to obtain the invention as specified in **claim 3**.

Regarding **claim 11**, Lesea further discloses characterized in that the ballast produces the voltage pulses as well as dead time (See e.g. Abstract and Col. 5, ll. 31-37).

Lesea does not explicitly disclose wherein the ballast produces a driving signal by means of programmed algorithms.

Ribarich discloses using programmed integrated circuit (i.e. a programmed algorithm) to control and drive a fluorescent lamp (i.e., produce a driving signal by means of programmed algorithms (See e.g., Ribarich Col. 3, ll. 3-8)

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Ribarich and Lesea because by implementing a programmed algorithm (*e.g. on a programmed integrated circuit*) the number of external components in an electronic ballast are reduced (See e.g. Ribarich Summary, Col. 3, l. 66 – Col. 4, l. 1).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Ribarich, and Lesea to obtain the invention as specified in **claim 11**.

Claim 5 is rejected under 35 U.S.C. 103(a) over AAPA and Lesea (US Patent 4,415,839) as applied to **claim 1** above, and further in view of view of Lau (U.S. Patent 5,444,333).

Lesea does not disclose further comprising the step of activating special couplings of connection/fixation of the fluorescent tubes by the ballast in order to short

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cut the filaments of the electrodes of the fluorescent tubes to cancel the current through them and to thus avoid the losses in voltage.

Lau discloses that further comprising the step of activating special couplings of connection/fixation of the fluorescent tubes by the ballast in order to short cut the filaments of the electrodes of the fluorescent tubes to cancel the current through them and to thus avoid the losses in voltage (See Lau, Abstract).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lesea by incorporating ceasing the flow of current through the filaments of a fluorescent lamp in order to increase the efficiency of the lamp as taught in Lau (i.e. "to *avoid wasting energy*" See Lau, Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Ribarich, and Lau to obtain the invention as specified in **claim 5**.

Claim 6 is rejected under 35 U.S.C. 103(a) over AAPA and Lesea (US Patent 4,415,839) as applied to **claim 1** above, and further in view of Bildgen (U.S. Patent 5,914,569).

Lesea does not disclose further comprising the step of igniting conduction through the mercury vapor gas of the fluorescent tubes by the temporary connection of a capacitor making it possible to increase tension between the electrodes of each fluorescent tube and that the capacitor is disconnected as soon as conduction is obtained.

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Bildgen discloses further comprising the step of igniting conduction through the mercury vapor gas of the fluorescent tubes by the temporary connection of a capacitor making it possible to increase tension between the electrodes of each fluorescent tube and that the capacitor is disconnected as soon as conduction is obtained (Bildgen, Col. 3, l. 38 – 45).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lesea by incorporating the temporary connection of a starting capacitor to increase the tension between the electrodes so as to facilitate ignition of the gas in the tubes as taught in Bildgen (See e.g. Bildgen, Col. 3, l. 38 – 45).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Lesea, and Bildgen to obtain the invention as specified in **claim 6**

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, Lesea (US Patent 4,415,839), and Bildgen (U.S. Patent 5,914,569) as applied to **claim 6** above, and further in view of Toyama (U.S Patent 6,720,740).

Bildgen discloses a capacitor to increase the tension across the electrodes.

Bildgen does not disclose further comprising the step of modifying the current level crossing the gas by the ballast, so the current crossing the capacitor is minimized before the disconnection of the capacitor.

Toyama discloses further comprising the step of modifying the current level crossing the gas by the ballast, so the current crossing the capacitor is minimized before the disconnection of the capacitor (See Toyama Summary. *Examiner notes that*

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Toyama discloses a rational for switching or disconnecting the capacitor when the current crossing the capacitor is minimized in order to reduce switching (or disconnection) loss)

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine to modify the operating mode of Bildgen and Lesea by minimizing the current crossing the capacitor before disconnection of the capacitor, as disclosed by Toyama, in order to promote efficiency (See e.g. Toyama Summary).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Lesea, Bildgen and Toyama to obtain the invention as specified in **claim 7**.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Lesea (US Patent 4,415,839) as applied to **claim 1** above, in view of Katyl et al. (U.S. Patent 6,181,086).

Lesea does not disclose further comprising the step of communicating the ballast with a remote central control unit through at least one of a wired and wireless link for performance monitoring and remote failure detection.

Katyl et al. further comprising the step of communicating the ballast-with a remote central control unit through at least one of a wired and wireless link for performance monitoring and remote failure detection (See e.g. Abstract and Summary, Col. 3, l. 33 – 34).

At the time of the invention, it would have been obvious to one of ordinary skill to modify the method of Lesea to include a ballast that communicates with a remote central control unit for performance monitoring and remote failure detection, as taught in Katyl et al., because incorporating it would allow for more effective management of energy usage as well as system maintenance (See Katyl et al., Summary, Col. 3, l. 17 – 34).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Lesea, and Katyl et al. to obtain the invention as specified in **claim 8**.

Regarding **claims 9 and 12-16**, **claims 9 and 12-16**, are rejected for at least all the same reasons as given above the rejection of **claims 1 and 4-8**. Examiner notes although **claim 1-8** now recite method claims (directed to the apparatus claims) while **claims 9-17** now recite apparatus claims, the recited limitation in the claims are almost identical. Furthermore, due to the numerous errors in the claims, this provides the clearest rational rejection of the claims.

Regarding **claim 9**, **claim 9** is rejected for at least all the same reasons as given in the rejection of **claim 1**.

Regarding **claim 12**, **claim 12** is rejected for at least all the same reasons as given in the rejection of **claim 4**.

Regarding **claim 13**, **claim 13** is rejected for at least all the same reasons as given in the rejection of **claim 5**.

Regarding **claim 14**, **claim 14** is rejected for at least all the same reasons as given in the rejection of **claim 6**.

Regarding **claim 15**, **claim 15** is rejected for at least all the same reasons as given in the rejection of **claim 7**.

Regarding **claim 16**, **claim 16** is rejected for at least all the same reasons as given in the rejection of **claim 8**.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, in view of Lesea (US Patent 4,415,839), further in view of Bildgen (U.S. Patent 5,914,569), further in view of Sakurai et al. (US Patent 5,034,661), further in view of Ribarich (US Patent 6,617,805), and further in view of Krummel (US Patent 5,854,538).

Regarding **claim 20**, Lesea discloses a method of operating a fluorescent tube for reducing an operating temperature the fluorescent tube and improving electronic ballast reliability, said method comprising the steps of:

producing non periodic voltage pulses from the ballast (Col. 5, ll. 31-37.

Examiner notes that the ballast generates the voltage pulses on LINE 56).;

applying the non periodic voltage pulses to the electrodes for exciting the fluorescent gas, the non periodic pulses are separated by variable duration dead times being of alternative form including amplitudes of equal values but of positive and negative polarity (See Fig. 2, LINE 56 and Col. 6, ll. 43-47 and Col. 4, ll. 56-61 and Abstract); and

Lesea discloses providing at least one fluorescent tube (See Fig. 1).

AAPA disclosed providing at least one fluorescent tube containing a fluorescent gas, at least one electrode including at least one heating filament cathode located at each end of the fluorescent tube, a fixture that comprises holding and connection devices for the fluorescent tube, and a ballast for driving the fluorescent tube; (See Application, Background of the Invention, and Fig. 1. *Examiner notes that in the first claim was written in Jepson form and this was admitted prior art and although Lesea discloses providing at least one fluorescent tube, as this was AAPA, Examiner has cited this*).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine AAPA with the Ballast of Lesea in order to drive the fluorescent lights of AAPA relatively simply and inexpensively and in a highly efficient and regulated manner (See Lesea Col. 4, ll. 6-9).

Neither AAPA nor Lesea disclose igniting conduction by temporary connection of a capacitor in parallel with the tube.

Bildgen disclose igniting conduction through the fluorescent gas of the fluorescent tube by the temporary connection of a capacitor in parallel with the fluorescent tube making it possible to increase tension between the electrodes of the fluorescent tube; disconnecting the capacitor when conduction is obtained (Bildgen, Col. 3, l. 38 – 45).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lesea and AAPA by incorporating the temporary connection of a starting capacitor to increase the tension between the electrodes so as

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to facilitate ignition of the gas in the tubes as taught in Bildgen (See e.g. Bildgen, Col. 3, l. 38 – 45).

Lesea discloses monitoring current flowing through the fluorescent tube, regulating the dead time.

However, neither Lesea, nor AAPA, or Bildgen disclose monitoring current, regulating current and increasing collisions based on the resonance effect in the gas.

Sakurai et al. discloses using the resonance effect in the gas to increase emission of light and improve efficiency (See Sakurai et al. Summary "a pulse-like voltage is applied across a glass bulb so that the probability wherein molecules of gas which is enclosed in the bulb and contributes to emission of light may be excited at at such an energy level that a great amount of ultraviolet rays of the gas may be produced by resonance in order that that the lamp may increase emission of light and improve the efficiency and may restrain wear of electrodes..."). Therefore, the combination of Sakurai et al. with Lesea, AAPA, and Bildgen discloses monitoring current flowing through the fluorescent tube for determining a resonance effect, thereby allowing the ballast to monitor a voltage waveform of the fluorescent tube in real time; regulating the dead time to supervise the conditions and physical parameters coupling voltage variations and collision rate between electrons and mercury atoms; allowing the igniting of conduction to continue until a predetermined nominal running mode is reached; increasing the number of collisions between electrons and mercury atoms by depending current intensity on the resonance effect in the fluorescent gas allowing the current to decrease until a phenomenon of resonance is stable according to environmental

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conditions; and allowing the current crossing the fluorescent tube and emission of light from the fluorescent tube to increase by successive steps (*Examiner notes that the lamp operates the resistance of the plasma decreases and accordingly the current increases to reach resonance of the gas in the tube*).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the resonance effect of the gas as taught in Sakurai et al. with the system disclosed in Lesea, AAPA, and Bildgen in order to take advantage of 'the resonance effect of the gas in the fluorescent lamp' so as to increase emission of light and improve the efficiency of the lamp (See Sakurai et al. Summary).

Neither Sakurai et al. nor Lesea, nor AAPA, or Bildgen disclose using a programmed function to regulate the lamp.

Ribarich discloses using a programmed integrated circuit (i.e. a programmed algorithm) to monitor operating conditions (Ribarich Col. 3, l. 8 – 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Lesea by implementing a programmed algorithm that a ballast uses to monitor the voltage signals as well as dead times.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Ribarich, Sakurai et al., Lesea, AAPA, and Bildgen because by implementing a programmed algorithm (*e.g. on a programmed integrated circuit*) the number of external components in an electronic ballast are reduced (See e.g. Ribarich Summary, Col. 3, l. 66 – Col. 4, l. 1).

Neither Ribarich nor Sakurai et al. nor Lesea, nor AAPA, or Bildgen disclose controlling a pre-heating of the cathodes.

Krummel discloses controlling a pre-heating of the cathodes of the electrodes until a predetermined optimal operation is reached due to a controlled and specific excitation during the ignition of conduction of the fluorescent gas indifferent to temperature in the fluorescent tube (See e.g., Krummel Col 5, ll. 15-30. *Examiner notes that because the coil resistance rises as the temperature increases, pre-heating is conducted regardless or indifferent to the beginning temperature of the lamp or of the rest of the lamp*).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Krummel with Ribarich, Sakurai et al., Lesea, AAPA, and Bildgen so as to provide pre-heating to the lamp for smoother and longer operation of the lamp.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Krummel with Ribarich, Sakurai et al., Lesea, AAPA, and Bildgen to obtain the invention as specified in **claim 20**.

Response to Arguments

Applicant's arguments with respect to **claims 1-17** have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 07/15/2011 have been fully considered.

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Regarding Applicant's argument "7" stating that the Lesea reference does not disclose, teach, or suggest that voltage pulses are applied to the electrodes for exciting the fluorescent gas, wherein the voltage pulses are applied to the electrodes for exciting the fluorescent gas, wherein the "pulses consisting of non periodic voltage levels separated by variable duration dead times being of alternative form including amplitudes of equal values but of positive and negative polarity', as per amended claim 1." Examiner points out that Lesea disclose the voltage pulses on LINE 56 that are applied to the electrodes (through network 28). Examiner notes that even with network 28 a broadest reasonable interpretation of Applicant claims does not preclude applying Lesea. Furthermore, Lesea discloses that the pulses are of equal values but of positive and negative polarity (See e.g., rejection above and Lesea Abstract). Specifically, Lesea discloses "...alternates as positive going and negative going pulses each separated by a dead time." As the transistors are tied to lines 44 and 42 and for a 110 volt mains, the line 46 potential is the same as the neutral, AC line potential (See Lesea Col. 4, ll. 56-60). Accordingly Lesea discloses all the claimed limitations addressed by Applicant. Therefore, the argument is unpersuasive.

Regarding Applicant's argument "8" stating that Ribarich does not disclose the "the voltage pulses consisting of non periodic voltage levels.....". Examiner points out that Ribarich was not relied on to teach "the voltage pulses consisting of non periodic voltage levels....." Therefore, the argument is unpersuasive.

Regarding Applicant's argument "9" stating Lau can not be combined with Lesea, Examiner points out that Lau was cited to teach "the special couplings." Although, the

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Ballasts in both references understandably differ, this difference would not preclude one of ordinary skill in the art at the time of the invention to include the power saving innovation of Lau with the ballast in Lesea. Therefore, the argument is unpersuasive.

Regarding Applicant's arguments "10," "11," and "12" Examiner relies on the reasoning above in the response to argument "9." Examiner has combined the references (with the exception of Vakil et al. which is no longer cited) for the reasons given above and although the references disclose different inventions, one of ordinary skill in the art would combine them, for the reasons given above, at the time of the invention. Therefore, these arguments are unpersuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY ARPIN whose telephone number is (571)270-1957. The examiner can normally be reached on M-F 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacob Y. Choi can be reached on (571) 272-2367. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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